AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for forming an ethylene-alpha olefin polymer suitable for use as a lubricant base oil comprising:

(a) polymerizing an olefin feed containing ethylene and at least one alpha-olefin in the presence of a metallocene catalyst system under conditions sufficient to produce a liquid polymer;

(b) isomerizing the liquid polymer <u>in the substantial absence of molecular hydrogen and</u> in the presence of an acidic isomerization catalyst to produce an isomerized liquid polymer; and

(c) hydrogenating the isomerized liquid copolymer in the presence of a hydrogenation catalyst to produce an ethylene - alpha olefin polymer suitable for use as a lubricant base oil.

2. (Original) The method of claim 1 wherein the feed comprises 0.1 to 85 wt% ethylene and 15 to 99.9 wt% of at least one alpha olefin.

3. (Original) The method of claim 2 wherein the alpha olefin has from 3 to about 24 carbon atoms.

4. (Original) The method of claim 2 wherein the polymerizing is conducted in the temperature range of from about 0°C to about 250°C in the substantial absence of molecular hydrogen and at pressures in the range of about 7 kPa (about 1 psi) to about 13.79 MPa (about 2,000 psi).

5. (Original) The method of claim 4 wherein the isomerizing is conducted in the substantial absence of molecular hydrogen at temperatures from about 100°C to about 400°C and pressures from about 7 kPa (about 1 psi) to about 13.79 MPa (about 2,000 psi).

6. (Original) The method of claim 4 wherein the hydrogenating is conducted at temperatures in the range of about 100°C to about 350°C and at pressures of about 103 kPa (about 15 psi) to about 13.79 MPa (about 2,000 psi).

7. (Original) The method of claim 6 wherein the alpha olefin has 3 or 4 carbon atoms.

8. (Original) The method of claim 6 wherein the olefin feed contains additional olefins that are substantially inert under said polymerizing condition.

9. (Original) The method of claim 6 wherein the hydrogenating is conducted under conditions sufficient whereby the polymer has a bromine number less than 2.

10. (Currently Amended) An ethylene-alpha olefin ~~co~~polymer comprising:

(a) an ethylene unit content of 0.1 to 85 wt%;

(b) an alpha olefin unit content of 15 to 99.9 wt%;

(c) a mixed head to tail and ~~tail~~ head to head molecular structure;

(d) a pour point below about -15°C; and

(e) a cloud point of not more than 20°C.

11. (Currently Amended) The ~~co~~polymer of claim 10 wherein the alpha olefin unit comprises at least one alpha olefin having from 3 to about 24 carbon atoms.

12. (Currently Amended) The ~~co~~polymer of claim 10 wherein the alpha olefin unit has 3 or 4 carbon atoms.

13. (Currently Amended) The ~~co~~polymer of claim 11 or 12 wherein the ~~co~~polymer has a bromine number less than 2.

14. (New) The polymer of claim 10 wherein the polymer is a copolymer.